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PATENT SPECIFICATION

DRAWINGS ATTACHED

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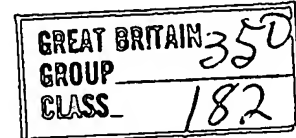
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COMPLETE SPECIFICATION

Component for Scaffolding

I, EBERHARD LAYHER, a German Citizen of, Eibensbach (Kreis Heilbronn), Germany, do hereby declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to a component for scaffolding which serves at the same time as boarding i.e. as gang planks and as bracing in metal or wooden scaffolding.

The use of either rods or boards as bracing for scaffolding is known, or scaffold mattresses or frames may be inserted. Planks, boards or the like usually serve as the boarding and act only as gangways and add to the load on the scaffold without increasing its stiffness and contribute nothing to the strength of the scaffold. Under loads the gangways bend and vibrate so that they very often have to be supported at short distances by cross members.

In addition they have to be secured against the wind. A relatively large amount of work is entailed in the erection of such scaffolding.

The metal frames used are heavy in themselves and are additionally loaded by the boarding so that a particularly unfavourable weight to strength ratio is produced. They are also expensive in relation to their load bearing capacity.

Accordingly it has been suggested to produce scaffolding components, for horizontal use in the form of panel-shaped metal or wooden slabs in which the boarding is firmly secured to the actual frame or forms a unit therewith. However in order to obtain the necessary stiffness to prevent bending, the width of span and the cross-section must be chosen accordingly. If the components are not to become too heavy for handling and transport the width of span has to be restricted or the thickness is so small that marked bending takes place with greater widths. With a thicker cross-section the components become heavy and unwieldy and can no longer be han-

dled by one person. On the other hand the use of light metal is not suitable due to the high price thereof, quite apart from the fact that the lack of resilience of aluminium renders it a poor material for such purposes.

The object of the invention is to provide scaffolding components in which the gangway and frames are formed as one but in which at the same time the weight can be kept so low that the components can be handled easily whilst having sufficient width of span and load bearing qualities.

This is obtained according to the invention by providing a scaffold component to serve as planking for wood or metal scaffolding characterised in that the scaffold component consists of two panels disposed in parallel planes at a given distance apart, between which a plurality of generally longitudinally extending ribs is so arranged that hollow spaces the total volume of which is greater than the total volume of the ribs are enclosed by the panels and the individual ribs, the component being provided with metal fittings for securing it to other scaffolding parts.

The scaffold component may of course be protected against mechanical damage by means of casings or coverings in the usual way. More particularly metal reinforcements are provided on the ends which serve on the one hand to protect the edges and on the other to hang the component on the correspondingly constructed vertical parts of the scaffold.

Due to the construction of the scaffold component according to the invention the compressional and the tensional forces arising in the outer layers on bending are taken up by two closure plates, the forces of compression by the upper one and those of tension by the lower one whilst in the more or less neutral layers the effective cross-section of the carrying material where smaller forces are expected is less. With the same thickness of component considerably less weight, and an equal strength against bending are obtained.

[Price 4s. 6d.]

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This ratio of thickness to weight is all the more favourable the greater the distance between the two plates, care naturally having to be taken that the total thickness is related to other dimensions of the element, such as its span. The rigidity of such a component is exceptionally high in relation to its weight and the span of such a scaffold component can be chosen sufficiently wide without its resistance to bending being reduced thereby and without the weight of the component becoming so great its handiness is diminished. As on erecting scaffolding the components according to the invention are hung in a simple manner on the vertical members of the scaffolding and have sufficient rigidity of themselves, the possibility results of obtaining bracing of a portion of the scaffolding by means of a single horizontal component a gangway being provided simultaneously without additional weight.

Embodiments of the invention will now be described, by way of example, with reference to the accompanying drawings in which:—

Fig. 1 is a perspective view of a first embodiment of scaffold component according to the invention;

Fig. 2 is a top plan view of a second embodiment of scaffold component according to the invention and;

Fig. 3 is a perspective view of a third embodiment of scaffold component according to the invention;

A scaffold component 1 is shown in Fig. 1, end or side fittings, such as suspension devices which are provided for securing the same to vertical scaffolding members omitted for the sake of clarity.

The component shown in Fig. 1 consists of an upper panel 11 and a bottom panel 12, which are arranged parallel to each other at a given distance apart. Wooden ribs 13 and 14 are arranged edgewise between the two panel 11 and 12. Of these the ribs 13 are short whilst the ribs 14 in each case extend over the whole length of the panel. The short ribs 13 are arranged, at the ends of the scaffold component adjacent to each other and are glued to each other and to the ends of the ribs 14.

They determine the distance between adjacent through ribs 14, and form outwardly the end faces of the scaffold component.

The longitudinal sides are closed by bars 15 serving as side webs. The ribs 14 extend through to form spaces 16 between the two panels 11 and 12.

The longitudinal ribs 14 are parallel to each other and to the side webs 15. The panels 11 and 12 are made for example of plywood.

The ribs running longitudinally may of course be arranged in another way. Fig. 2 shows such an arrangement in top plan view with the top panel removed. Here again fittings such as suspension devices are not shown. The short ribs 13 are arranged adjacent

each other as in the preceding example. They are glued to each other and to the through ribs 14 and 16 and determine their distance apart. They form the end surface of the scaffold element or component 1. Some of the ribs extending longitudinally namely ribs 14, run parallel to the longitudinal edges of the panels and to the ribs 15 forming the sides.

Ribs 17 arranged diagonally are provided between the side webs 15 and the ribs 14 which extend longitudinally and also between the latter ribs 14.

By this means the hollow spaces 18 are formed of triangular shape.

In the scaffold component shown in Fig. 3 through ribs 19 and 20 are not arranged parallel to the side edges and to the side webs 15 forming the longitudinal sides, but run in a random manner slightly diagonally to the longitudinal axis of the scaffold element. They consist partly of single ribs 19, and are partly formed from two (or more) ribs 20 which overlap and are glued together. Between these through ribs 19 and 20 shorter diagonal ribs are provided which are formed with a suitable mitre and are connected to the through ribs by a joint.

The hollow spaces 22 formed between the ribs differ in shape from each other in an irregular manner.

An end fitting 23 is secured by means of screws 24 to each end face of the panel formed by the short ribs glued to each other and to the through ribs 19, 20.

This end fitting 23 is provided with an extension extending over the whole width of the scaffold component and has a profile forming a downwardly directed U which serves for hanging the element on a correspondingly designed member or in securing devices mounted on the uprights.

In place of the end fitting 23 described it is possible to provide a fitting embracing the end of the component the fitting being of a U shape cross-section over its whole width.

On the other hand at each end of the component two laterally engaging fittings could be mounted which embrace the component along both longitudinal sides in a U shape. All these fittings are conveniently secured to the component by screws or rivets. In place of the continuous extension 23', hook shaped tongues for hanging on the scaffold component could be provided which could be secured, for example by welding, either to the face or the two longitudinal sides, of the end fitting.

A rough surface is on the panel 11 in order to avoid sliding and creeping of the component. The ribs provided between the panels may be advantageously arranged on edge to increase the stiffness and may consist of any suitable form of wood i.e. in the form of strips of plywood or of chipboard strips which are either produced as such ready to be built in for example as mouldings, or cut out of chip-